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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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07/17/2002

Frank Kowalewski

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EXAMINER

LY, ANH VU H

ART UNIT

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/089,395	<b>Applicant(s)</b> KOWALEWSKI, FRANK	
	<b>Examiner</b> ANH-VU H. LY	<b>Art Unit</b> 2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

1. This communication is in response to Applicant's amendment filed January 25, 2008.

Claims 9-16 are pending.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 9-10, 13, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jepsen et al (US Patent No. 6,724,815 B1) in view of Jones, IV et al (US Patent No. 6,657,949 B1) further in view of the admitted prior art as disclosed in the specification in page 1. Hereinafter, referred to as Jepsen, Jones, and APA.

With respect to claim 9, Jepsen discloses a data transmission method (Fig. 2), comprising:

transmitting a data signal between a transmitter and a receiver (Fig. 1, base station 101 and remote stations 103, 107 communicating over radio channels 105. Herein, either the base station or the remote stations can be the transmitter or the receiver and vice versa) as a data stream of data bursts (Fig. 2) in either a first transmission mode (Fig. 2, part 2) or a second transmission mode (Fig. 2, part 1);

in the first transmitting mode (Fig. 2, part 2), transmitting a reference signal by the transmitter in each data burst (col. 3, lines 54-56, a GSM burst consists of two blocks of data 203

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surrounding a midamble 205 containing the training data. Herein, as illustrated in Fig. 2, part 2, each data burst containing a training sequence or TS 205), the reference signal being evaluated in the receiver (Fig. 1, remote stations 103 and 107 perform channel estimation using known training data, TS 205, as illustrated in Fig. 2); and

in the second transmission mode (Fig. 2, part 1), avoiding the reference signal by the transmitter in each data burst and instead transmitting additional data in each data burst (col. 8, lines 10-13 and Fig. 4, the enhanced units being characterized by being able to transmit data instead of midamble and being able to receive GSM signals with midamble replaced by user data).

Jepsen does not disclose that the additional data is redundancy data of the data signal. Jones discloses that to increase the probability of accurate reception of the access request data even under difficult channel conditions, the access request data is duplicated N times (col. 5, lines 16-19). Further, Jones discloses that a redundant symbol formation block 404 positions the RA data symbols within the burst and creates the redundant data sets as shown in figures 2A-2C (col. 5, lines 38-41). It would have been obvious to one having ordinary skill in the art at the time the invention was made to transmit redundant data instead of additional data in Jepsen's system, as suggested by Jones, to increase the probability of accurate reception of data.

Jepsen discloses a selection between first transmission mode and second transmission mode (Fig. 2). Wherein, first transmission mode includes the training sequence to be used by the receiver for determining channel estimation (interference elimination is performed at the receiver). And wherein, the second transmission mode does not include the training sequence as allowed by the propagation conditions thereby additional data can be transmitted. Jepsen does

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not disclose eliminating the training sequence if the interference elimination is performed at the transmitter. APA discloses that interference can also be eliminated in the transmitter if the channel pulse responses are known. Then the channel pulse response no longer needs to be computed in the receiver. In other words, transmission of a reference signal is then not necessary (page 1, lines 26-28). It would have been obvious to one having ordinary skill in the art at the time the invention was made to eliminate the training sequence in the data burst if channel pulse responses are known to the transmitter in Jepsen's system, as suggested by APA, therefore, additional data can be transmitted to increase throughput.

With respect to claim 10, Jepsen discloses that the enhanced units transmit data instead of midamble (col. 8, lines 10-13). Jepsen does not disclose that the additional redundancy data are provided by data of the data signal that are transmitted in repetition. Jones discloses that a redundant symbol formation block 404 positions the RA data symbols within the burst and creates the redundant data sets as shown in figures 2A-2C (col. 5, lines 38-41. Herein, the redundant data sets are data of a data signal). It would have been obvious to one having ordinary skill in the art at the time the invention was made to transmit redundant data instead of additional data in Jepsen's system, as suggested by Jones, to increase the probability of accurate reception of data.

With respect to claim 13, Jepsen discloses that in the second transmission mode, eliminating interference in the transmitter (col. 8, lines 10-13 and Fig. 4, the enhanced units being characterized by being able to transmit data instead of midamble and being able to receive

GSM signals with midamble replaced by user data, as illustrated in Fig. 2, part 1. Herein, interference is eliminated since the enhanced units transmit data in the allocated and assigned channels 411).

With respect to claim 15, Jepsen discloses that the data bursts have at least two data blocks (col. 3, lines 54-56, a GSM burst consists of two blocks of data 203 surrounding a midamble 205 containing the training data), between which a block is arranged which is used, in the first transmission mode, for the reference signal (Fig. 2, part 2, training sequence 205 is placed between two data blocks 203) and which is used, in the second transmission mode, for the additional data (Fig. 2, part 1, in second burst, training sequence 205 is replaced with extra or redundant data 205). Jepsen does not disclose that the additional data is additional redundancy data. Jones discloses that a redundant symbol formation block 404 positions the RA data symbols within the burst and creates the redundant data sets as shown in figures 2A-2C (col. 5, lines 38-41). It would have been obvious to one having ordinary skill in the art at the time the invention was made to transmit redundant data instead of additional data in Jepsen's system, as suggested by Jones, to increase the probability of accurate reception of data.

With respect to claim 16, Jepsen discloses selecting a data format for the data signal to be transmitted in both the first transmission mode and the second transmission mode so as to be identical (col. 8, lines 6-10 and Fig. 4, a GSM cellular communication system comprising standard GSM mobile terminals, enhanced GSM mobile terminals, standard and enhanced base stations. Herein, data transmissions or data formats are in accordance to GSM standard).

3. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jepsen, Jones, and Klein further in view of Brown et al (US Patent No. 5,113,413). Hereinafter, referred to as Jepsen, Jones, Klein, and Brown.

With respect to claims 11 and 12, Jepsen discloses that the data transmitted in repetition received in repetition by the receiver (Fig. 2, part 1, in second burst, each data block 203 is received in repetition at the remote stations 103 and 107, illustrated in Fig. 1). Jepsen does not disclose evaluating data separately in the receiver and selecting a data version of the data transmitted in repetition having a stronger received signal for at least one of further processing and delivery to a user. Brown discloses that the sites, which receive the transmission, generate an "RSSI" indication of the quality of the received signal. The communication system typically may vote on redundant versions, data transmitted repeatedly, of the same received signal to select a single version of the received signal for use. Herein, the selected version is the one having better RSSI (col. 2, lines 35-52). It would have been obvious to one having ordinary skill in the art at the time the invention was made to include voting and selecting features in Jepsen's system, as suggested by Brown, to produce a favorable voted frame signal.

4. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jepsen, Jones, and Klein further in view of Hobbis (US Patent No. 6,760,589 B1). Hereinafter, referred to as Jepsen, Jones, Klein and Hobbis.

With respect to claim 14, Jepsen discloses a method and apparatus for increasing data rate by reduction of training data (Fig. 2). Jepsen does not disclose transmitting a plurality of data streams simultaneously according to a CDMA technique. Hobbis discloses a CDMA

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communications system for transmitting a plurality of data streams simultaneously to subscriber unit 101 (Fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to transmit CDMA data streams in Jepsen's system, as suggested by Hobbis, since CDMA system has more capacity than GSM system and CDMA virtually eliminates cloning and other types of fraud.

### ***Response to Arguments***

5. Applicant's arguments with respect to claims 9-16 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.



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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANH-VU H. LY whose telephone number is (571)272-3175.

The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

avl

/Anh-Vu H Ly/

Primary Examiner, Art Unit 2616